Test Report
Binder Content and Mix Gradation

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Bituminous Concrete (BC)
Contractor	Sri. R.LOKESH
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Bay
Material	Bituminous Concrete mix
Sample No	3
Date	10-Apr-2018

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_s)	gm	w_{sb}	1790
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	710
4	Weight of bowl + Sample after extraction (w_s)	gm	w_{sa}	1750
5	Weight of Sample after extraction (i.e. washed aggregates) (S_a)	gm	$S_a = w_{sa} - Eb$	670
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	4
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	2
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	40
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	38
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_b$)	(%)	$W_a / SbX100$	5.35

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	19.00	0.00	0.00	0.00	100.00	100.00	Gradation satisfies the MORT&H Grade II Specification for Bituminous Concrete
2	13.20	677.00	16.93	16.93	83.08	72-100	
3	9.50	436.00	10.90	27.83	72.18	70-88	
4	4.75	235.00	5.88	33.70	66.30	53-71	
5	2.36	480.00	12.00	45.70	54.30	42-58	
6	1.18	346.00	8.65	54.35	45.65	34-48	
7	0.60	440.00	11.00	65.35	34.65	26-38	
8	0.30	432.00	10.80	76.15	23.85	18-28	
9	0.15	385.00	9.63	85.78	14.23	12-20)	
10	0.08	366.00	9.15	94.93	5.08	(4-10)	

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Binder Content and Mix Gradation

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Bituminous Concrete (BC)
Contractor	Sri. R.LOKESH
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Bay
Material	Bituminous Concrete mix
Sample No	4
Date	10-Apr-2018

Sl. No.	Description	Unit	Computation	Test Result
1	Weight of Empty bowl before Extraction (E)	gm	Eb	1080
2	Weight of bowl + Sample before extraction (w_s)	gm	w_{sb}	1832
3	Weight of Sample taken for the test (S_b)	gm	$S_b = w_{sb} - Eb$	752
4	Weight of bowl + Sample after extraction (w_s)	gm	w_{sa}	1789
5	Weight of Sample after extraction (i.e. washed aggregates) (S_a)	gm	$S_a = w_{sa} - Eb$	709
6	Weight of Filter paper before extraction (F_b)	gm	F_b	2
7	Weight of Filter paper after extraction (F_a)	gm	F_a	4
8	Weight of filler on filter paper (F_d)	gm	$F_d = F_b - F_a$	2
9	Weight of Bitumen without considering Filter paper (W_b)	gm	W_b	43
10	Weight of the Bitumen with considering Filter paper (W_a)	gm	$W_a = w_b - F_d$	41
11	Percentage of the Bitumen (i.e. Binder Content) ($\%_b$)	(%)	W_a/ SbX100	5.45

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained (%)	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	19.00	0.00	0.00	0.00	100.00	100.00	Gradation satisfies the MORT&H Grade II Specification for Bituminous Concrete
2	13.20	679.00	16.98	16.98	83.03	72-100	
3	9.50	438.00	10.95	27.93	72.08	70-88	
4	4.75	237.00	5.93	33.85	66.15	53-71	
5	2.36	482.00	12.05	45.90	54.10	42-58	
6	1.18	348.00	8.70	54.60	45.40	34-48	
7	0.60	442.00	11.05	65.65	34.35	26-38	
8	0.30	434.00	10.85	76.50	23.50	18-28	
9	0.15	387.00	9.68	86.18	13.83	12-20)	
10	0.08	368.00	9.20	95.38	4.63	(4-10)	

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Quality of Bitumen

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri. R.LOKESH
Test Method	IS : 73 – 1992 & Specification for Road & Bridge Works, MORT&H, Revision IV.
Grade of Bitumen	60 / 70
Location	Hot Mix Plant
Material	Bitumen
Sample No	1
Date	2-Apr-2018

Sl. No.	Description	Test Results	Requirement as per IS:73 - 1992
1	Penetration at 25^0C , 1 / 10 mm	65	60 – 70
2	Softening Point, (^{0}C)	49	45 – 55
3	Specific Gravity	1.1	Min. 0.97
4	Ductility at 27^0C, in cm	80	Min. 75
5	Flash Point, (^{0}C)	183	Min. 175

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Quality of Bitumen

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri. R.LOKESH
Test Method	IS : 73 – 1992 & Specification for Road & Bridge Works, MORT&H, Revision IV.
Grade of Bitumen	60 / 70
Location	Hot Mix Plant
Material	Bitumen
Sample No	2
Date	2-Apr-2018

Sl. No.	Description	Test Results	Requirement as per IS:73 - 1992
1	Penetration at 25^0C , 1 / 10 mm	68	60 – 70
2	Softening Point, (^{0}C)	53	45 – 55
3	Specific Gravity	1.1	Min. 0.97
4	Ductility at 27^0C, in cm	80	Min. 75
5	Flash Point, (^{0}C)	183	Min. 175

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Rate of Spread of Tack Coat

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri. R.LOKESH
Location	At Site
Material	Bitumen
Sample No	1
Date	6-Apr-2018

Sl. No.	Determination	Unit	Test No 1		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.658	1.656	1.651
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.017	0.015	0.01
6	Rate of spread (d/a)	kg / m^2	0.425	0.375	0.250
7	Average	kg / m^2	0.350		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.350 kg / m2

Note:

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Asst. Executive Engineer
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Yelahanka Zone
Bangalore

Test Report
Rate of Spread of Tack Coat

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri. R.LOKESH
Location	At Site
Material	Bitumen
Sample No	2
Date	6-Apr-2018

Sl. No.	Determination	Unit	Test No 1		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.657	1.655	1.65
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.016	0.014	0.009
6	Rate of spread (d/a)	kg / m^2	0.4	0.35	0.225
7	Average	kg / m^2	0.325		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.325 kg / m2

Note:

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Asst. Executive Engineer
Project Division
Yelahanka Zone
Bangalore

Test Report
Rate of Spread of Tack Coat

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri. R.LOKESH
Location	At Site
Material	Bitumen
Sample No	3
Date	6-Apr-2018

Sl. No.	Determination	Unit	Test No 1		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.657	1.656	1.651
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.016	0.015	0.01
6	Rate of spread (d/a)	kg / m^2	0.4	0.375	0.25
7	Average	kg / m^2	0.358		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.358 kg / m2

Note:

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Asst. Executive Enginee
Project Division
Yelahanka Zone
Bangalore

Test Report
Rate of Spread of Tack Coat

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri. R.LOKESH
Location	At Site
Material	Bitumen
Sample No	4
Date	9-Apr-2018

Sl. No.	Determination	Unit	Test No 1		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.658	1.656	1.649
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.017	0.015	0.008
6	Rate of spread (d/a)	kg / m^2	0.425	0.375	0.200
7	Average	kg / m^2	0.333		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.333 kg / m2

Note:

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Asst. Executive Engineer
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Yelahanka Zone
Bangalore

Test Report
Rate of Spread of Tack Coat

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri. R.LOKESH
Location	At Site
Material	Bitumen
Sample No	5
Date	9-Apr-2018

Sl. No.	Determination	Unit	Test No 1 Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.656	1.658	1.653
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.015	0.017	0.012
6	Rate of spread (d/a)	kg / m^2	0.375	0.425	0.300
7	Average	kg / m^2	0.367		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.367 kg / m2

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

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Asst. Executive Engineer
Project Division.
Yelahanka Zone
Bangalore

Test Report
Rate of Spread of Tack Coat

Project Name	PACKAGE 5(1) Improvements of Road Adjecent to Yelahanka Lake From Kenchanahalli to Chowdeshwari temple in Ward No.2. 2)Improvements and Asplating to New post office Main Road and cross roads in Ward no 01. 3)Improvements and Asplating to suggappa layout cross roads in ward No 01. 4)Improvements and Asplating to Shanimahathma swamy temple road and surabi layout 2nd Main and cross Roads in ward No 01. 5)Asplating to Balance Roads in A & B Sector of Yelahanka New Town in Ward No 04)
Client	Executive Engineer Project Yellahanka Division
Job No	MCTPL/BBMP/Project Division Yelahanka ZONE /P-5/1/2017-2018
Mix Type	Dense Graded Bituminous Macadam
Contractor	Sri. R.LOKESH
Location	At Site
Material	Bitumen
Sample No	6
Date	9-Apr-2018

Sl. No.	Determination	Unit	Test No 1 Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.659	1.657	1.648
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.018	0.016	0.007
6	Rate of spread (d/a)	kg / m^2	0.45	0.4	0.175
7	Average	kg / m^2	0.342		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.342 kg / m2

Note:

i. The results indicated above are based on the tests carried out on the sample at site.

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